## REMARKS/ARGUMENTS

In view of the foregoing amendments and the following remarks, the applicants respectfully submit that the pending claims recite statutory subject matter under 35 U.S.C. § 101, and are not rendered obvious under 35 U.S.C. § 103. Accordingly, it is believed that this application is in condition for allowance. **If, however, the Examiner believes that there are any unresolved issues, or believes that some or all of the claims are not in condition for allowance, the applicants respectfully request that the Examiner contact the undersigned to schedule a telephone Examiner Interview before any further actions on the merits.**

The applicants will now address each of the issues raised in the outstanding Office Action.

## Rejections under 35 U.S.C. § 101

Claims 1, 3, 5-33, 35 and 37-66 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. The applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection in view of the following.

The features from dependent claims 69-71 and 73-75, which were not rejected under 35 U.S.C. § 101, have been added to independent claims 1, 7, 14, 33, 39 and 46, respectively. Dependent claims 69-71 and 73-75 have been canceled. Thus, independent claims 1, 7, 14, 33, 39 and 46 now recite statutory subject matter. Since the remaining claims directly or indirectly depend from one

18

of independent claims 1, 7, 14, 33, 39 and 46, these claims now also recite statutory subject matter.

## Rejections under 35 U.S.C. § 112

Claims 1, 3, 33 and 35 are rejected under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention. The applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection in view of the following.

The Examiner first contends:

> [c]laims 1 and 33 indicate that search information is independent of the documents retrieved from the search results, but claims 3 and 33 indicate that the user search information is dependent [on] search result information.

(Paper No. 20070722, page 4.) In response, the applicants respectfully note that claims 3 and 33 recite that "the act of determining an initial user profile information for the user *further uses past document selections by the user*." The applicants frankly do not see how the Examiner concludes that these claims "indicate that the user search information is dependent [on] search result information." Specifically, claims 1 and 33 recite determining initial user profile using *information* included in past search queries submitted to a search engine by a user, wherein *such information is independent of documents returned as search results* to

19

the past search queries. Claims 3 and 35 further recite that the determination of the initial user profile uses **past document selections** by the user. Claims 3 and 35 do <u>not</u> modify **the information** used in claim 1 and 33. Rather, they modify **the determination** made. That is, claims 1 and 33 recite that the determination uses a first type of information (A), while claims 3 and 35 should be read to recite that the determination uses a second type of information (B) in addition to the first type of information (A) -- (A and B).

The Examiner also contends that "the search results could not be independent of the user's search query information." (Paper No. 20070722, pages 4 and 5) This is not relevant, however, since the claims do not require that the search results be independent of the user search query information, but rather, recite that an act of, or means for, determining initial user profile information for the user using **information included in past search queries submitted to a search engine by the user, wherein such information is independent of documents returned as search results** to the past search queries. Since the claims recite **"search queries"** submitted to a search engine, not **"search results"** provided from the search engine, the Examiner's finding of inoperability is based on something that is not claimed.

In view of the foregoing, the applicants respectfully submit that claims 1, 3, 33 and 35 comply with 35 U.S.C. § 112, second paragraph.

20

## Rejections under 35 U.S.C. § 103

Claims 1, 3, 5-26, 33, 35, 37-58, 65, 66, 69-71 and 73-75 stand rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 5,754,939 ("the Herz patent") in view of U.S. Patent No. 5,724,567 ("the Rose patent"). The applicants respectfully request that the Examiner reconsider and withdraw this ground of rejection in view of the following.

Since claims 69-71 and 73-75 have been canceled, this ground of rejection is moot with respect to these claims.

As an initial matter, the applicants would like to take issue with the two aspects of the Examiner's rejection. First, the Examiner relies on Merriam Webster's dictionary to interpret the claim terms "topology", "graph" and "node". (See Paper No. 20070722, pages 6 and 7.) The applicants respectfully note that the MPEP provides that the scope of claims in patent applications is determined not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction "in light of the specification as it would be interpreted by one of ordinary skill in the art." (MPEP 2111) More importantly, in Phillips v. AWH Corp., 75 U.S.P.Q.2d 1321 (Fed. Cir. July 12, 2005) (en banc) (referred to as "Phillips v. AWH" below), the Court of Appeals for the Federal Circuit ("the CAFC") explained that extrinsic evidence such as evidence from dictionaries for example, is less significant than intrinsic evidence in determining the meaning of claim language. See, e.g., Id., at 1330. The CAFC explained:

21

there may be a disconnect between the
patentee's responsibility to describe
and claim his invention, and the
dictionary editor's objective of
aggregating all possible definitions
for particular words.

Id. at 1332-1333. The CAFC further clarified that this
problem is not limited to general dictionaries, but can
also occur in technical dictionaries and treatises
because:

the authors of dictionaries or
treatises may simplify ideas to
communicate them most effectively to
the public and may thus choose a
meaning that is not pertinent to the
understanding of particular claim
language.

Id., at 1333.

Since the specification can be used to clearly
discern the meaning of the claim terms as would be
understood by those of ordinary skill in the art, the
applicants see no need to use the Merriam Webster's
dictionary to interpret the claim terms "topology",
"graph" and "node".

Second, the Examiner *picks, chooses and combines
various disclosures of the Herz patent not directly
related to each other* as teaching various aspects of the
claimed invention. (See Paper No. 20070722, pages 9-11.)
However, the Examiner has not established that the
various cited elements in the Herz patent are *arranged as
in the claims.*

22

*Claims 1, 3, 5, 6, 33, 35, 37 and 38*

Independent claims 1 and 33 are not rendered obvious by the Herz and Rose patents because these patents, either taken alone or in combination, neither teach, nor suggest, an act of (or means for) *determining initial user profile information for the user using information included in past search queries submitted to a search engine by the user, wherein such information is independent of documents returned as search results to the past search queries.* Further, one skilled in the art would not have been motivated to combine these references as proposed by the Examiner.

As discussed in previous responses, the specification of the present application provides an illustrative example of how initial user profile information for a user can be determined using past search queries submitted by the user. Specifically, the specification states:

> There are many alternative ways to obtain user information. For example, a score 440 for an attribute 420 and value 430 can be determined with a machine learning classifier which predicts values 430 of the UPI attributes 420 in the profile using words in queries deployed previously. For example, given the keywords related to "women's health" in previous search queries, the classifier may infer that the user is a woman with probability 0.8. Further, given that Japanese words were used in previous search queries; the classifier may infer that the user is Japanese with probability 0.9, etc.

23

Page 24, lines 7-14.

The Examiner repeated his position that that column 4, lines 58-61 of the Herz patent teaches this feature. (See Paper No. 20070722, page 9.) As used in the Herz patent, a "search profile" or a "query profile" is a collection of attributes such that a user should like target objects with a target profile with a similar set of attributes. The "search profile" for a user may be determined using target profiles of articles that the user has accessed and the relevance feedback that the user has provided. The relevance feedback (or "passive feedback") may be a function of how much of (in terms of content or time) an article the user viewed, attributes of an email reply, attributes of a purchase, etc. Thus, the Herz patent uses relevance feedback (or passive feedback) to determine what types of objects (e.g., articles) a user likes, which, in turn, is used to help filter user searches. Defining a collection of attributes that a user likes target objects to have (e.g., short and long pieces of text) based on past behavior of the user does not teach **past search queries submitted to a search engine by the user**.

The Examiner also argues that the Herz patent can relate a user with past search words, such as past interest in films whose review text (attribute h) contains words like "chase," "explosion," "explosions," "hero," "gripping," and "superb," citing column 10, lines 37-42. (See Paper No. 20070722, page 10.) However, **attributes of movie reviews** that a user has been interested in neither teaches, nor suggests, **past search queries submitted to a search engine by the user**.

24

The Examiner apparently does not rely on the Rose
patent to compensate for this deficiency of the Herz
patent. Thus, independent claims 1 and 33 are not
rendered obvious by the Herz and Rose patents for at
least the foregoing reason. Since claims 3, 5 and 6
directly or indirectly depend from claim 1 and since
claims 35, 37 and 38 directly or indirectly depend from
claim 33, these claims are similarly not rendered obvious
by the Herz and Rose patents.

### Claims 7-13 and 39-45

Claims 7 and 39 are not rendered obvious by the Herz
and Rose patents because these patents, either taken
alone or in combination, neither teach, nor suggest, acts
of (or means for) inferring user profile information for
the user by (i) defining a node for each of a number of
documents and the user, (ii) adding edges between nodes
if there is an association between the nodes to define a
graph, and (iii) *inferring user profile information for
the user using a topology of the graph and user profile
information of other documents*.

The Examiner refers to Figures 1 and 2 of the Herz
patent, and contends that the nodes (computers) and links
(communications links) teach these features. (See Paper
No. 20070722, page 10.) The Examiner further argues that
in the Herz patent, the information servers contain the
target documents, citing column 26, line 37, and column
29, lines 1-5. (See Paper No. 20070722, page 10.)
However, Figures 1 and 2 of the Herz patent show nodes
and links in the context of computers that can
communicate with one another over a communications
network. These nodes and links are in no way related to

25

nodes and edges of a *graph, the topology of which is used to infer user profile information.*

The Examiner then argues that the system can link users to documents based on the users' interests in the documents or other documents associated with each link, citing column 60, lines 62-64. (See Paper No. 20070722, page 10.) This section merely concerns ranking links in a hypertext document, which are <u>in no way</u> related to nodes and edges of a graph, the topology of which can be used to infer user profile information.

The Examiner further argues that since the system can determine relationships between users and documents, "one skilled in the art *could* easily infer from these relationships to *create graphs,*" citing column 10, lines 46-53. (Paper No. 20070722, pages 10 and 11. Emphasis added.) First, the cited portion of the Herz patent merely discusses that a user might like movies similar to those the user has liked in the past, or might like movies liked by similar users. This has nothing to do with *inferring user profile information for the user using a topology of the graph and user profile information of other documents* as claimed. More importantly, the fact that a system "*could be*" modified is not the proper standard for showing obviousness under 35 U.S.C. § 103. The fact that graph theory defines objects with "nodes" and connections with "edges" neither teaches, nor suggests, (i) defining a node for each of a number of documents and the user, wherein each node represents a particular one of the number of documents or the user, (ii) adding edges between nodes if there is an association between the nodes to define a graph, and (iii) *inferring user profile information for the user*

26

*using a topology of the graph and user profile*
*information of other documents.*

The nodes and links in the Herz patent are described
in a totally different context than recited in
independent claims 7 and 39. When interpreting the terms
"nodes" and "edges", the Examiner improperly ignores the
specification as it would be interpreted by one of
ordinary skill in the art. (Recall Phillips v. AWH
Corp., discussed above.) In the instant application, the
specification discusses "nodes" in terms of representing
users and documents on a graph and "edges" between the
user node and document nodes for the top Web pages that
were returned by a search engine in response to search
queries that the user submitted, and perhaps between
pairs of documents that have links (e.g., hyperlinks)
between them. Specifically, with reference to Figures 10
and 11, the specification states:

> In one exemplary embodiment of the
> present invention, the association
> information 1070 may be *a graph in*
> *which users and documents are*
> *represented as nodes* 1072 and 1076,
> respectively. Figure 11 is a flow
> diagram of an exemplary method 1100
> that may be used to associate users
> and/or documents in a manner consistent
> with the present invention. As shown,
> *nodes may be defined for each user and*
> *document.* (Block 1110) For each of
> the user nodes 1072, *edges* 1074 (which
> indicate an association) *may be drawn*
> *between the user node and document*
> *nodes for the top Web pages that were*
> *returned by a search engine in response*
> *to search queries that the user*
> *submitted.* (In a variant, *the edges*
> 1074 *could be drawn only to Web pages*
> *that the user selected* (e.g., clicked
> on)). Additionally, *edges* 1078 *may be*

27

> *drawn between pairs of documents that have links (e.g., hyperlinks) between them.* (Block 1120) Although not shown, user-to-user associations may also be generated. For example, edges may be added between users that have visited one or more of the same documents. [Emphasis added.]

Page 25, lines 4-18. Thus, using the specification, one of ordinary skill in the art at the time of the invention would interpret "nodes" and "edges" as representations of users and documents, and relationships between users and documents, on a graph.

Furthermore, the Examiner argues that acts that are conditionally performed are not given weight since they need not be performed if the condition is not met. (See, e.g., Paper No. 20070722, pages 7 and 11.) The applicants note that claims 7-12 and 39-44 have been amended to recite that the condition is met (in which case the conditional act is performed). Therefore, the Examiner must give such elements of these claims patentable weight.

Moreover, although the Examiner apparently argues, on the one hand, that the information servers of the Herz patent contain documents to which the user can be linked, and that one could infer a graph from purported relationships between users and other users or users a documents, the Examiner later concedes that the Herz patent does not describe a node that represents a document or users. (See Paper No. 20070722, page 11.) In an attempt to compensate for this admitted deficiency of the Herz patent, the Examiner relies on the Rose patent. In particular, the Examiner contends that the

28

Rose patent teaches various concepts concerning users and documents. (See Paper No. 20070722, pages 11 and 12.) However, the applicants respectfully note that the cited portions of the Rose patent concern the notions of "term frequency" and "inverse document frequency" (TF/IDF), state that users and documents can be represented with a term vector, state that a user's profile vector may be updated, and state that similarities between term vectors can be determined using a cosine distance. The applicants frankly do not see how the cited sections of the Rose patent compensate for the conceded deficiency of the Herz patent. That is, the applicants cannot see how the cited portions of the Rose patent discussed above, which concern term vectors, teach a node (of a graph) representing documents or users. The applicants note that Figures 5A and 5B of the Rose patent merely illustrate the notion of cosine distance between feature vectors. It does not teach, nor does it suggest, a graph including nodes, some of which are connected.

Finally, the Examiner concludes, without any substantiation, that it would have been obvious for one skilled in the art at the time of the invention to have a system that has "graphical representation of users and/or document[s]. The motivation for one skilled to use graph would be to establish relationships between the user and/or document." (Paper No. 20070722, page 12.) Frankly, the Examiner has shown any support in the Herz and Rose patents to support this assertion.

Thus, independent claims 7 and 39 are not rendered obvious by the Herz and Rose patents for at least the foregoing reasons. Since claims 8-13 depend from claim 7 and since claims 40-45 depend from claim 39, these claims

29

are similarly not rendered obvious by the Herz and Rose patents.

### Claims 14-26 and 46-58

Independent claims 14 and 46 are not rendered obvious by the Herz and Rose patents because these patents do not teach acts of (or means for) determining user profile information for a document using both initial user profile information and inferred user profile information, associating with the document, the determined user profile information for the document, and storing the association of the document with the determined user profile information for the document. As indicated by Figure 5 of the present application, user profile information 524 may be associated with a document 522 (and other user profile information 514, 534, and 544 may be associated with other things 512, 532 and 542).

The Examiner cites column 10, lines 43-46 of the Herz patent as teaching recording associations between documents (movies) and users. Although movies can have attributes including a "list of customers who have previously rented this movie," (See, e.g., column 10, lines 22 and 23.), such a list is not a "user profile" as recited in claims 14 and 46.

Thus, independent claims 14 and 46 are not rendered obvious by the Herz and Rose patents for at least the foregoing reason. Since claims 15-26 and 65 directly or indirectly depend from claim 14 and since claims 47-58 and 66 directly or indirectly depend from claim 46, these claims are similarly not rendered obvious by the Herz and Rose patents.

30

Furthermore, the Examiner argues that acts that are conditionally performed are not given weight since they need not be performed if the condition is not met. (See, e.g., Paper No. 20070722, pages 7 and 11.) The applicants note that claims 20-25 and 52-57 have been amended to recite that the condition is met (in which case the conditional act is performed). Therefore, the Examiner must give such elements of these claims patentable weight.

## Conclusion

In view of the foregoing amendments and remarks, the applicants respectfully submit that the pending claims are in condition for allowance. Accordingly, the applicants request that the Examiner pass this application to issue.

Any arguments made in this amendment pertain **only** to the specific aspects of the invention **claimed**. Any claim amendments or cancellations, and any arguments, are made **without prejudice to, or disclaimer of**, the applicant's right to seek patent protection of any unclaimed (e.g., narrower, broader, different) subject matter, such as by way of a continuation or divisional patent application for example.

Respectfully submitted,

January 25, 2008

John C. Pokotylo, Attorney
Reg. No. 36,242
Tel.: (732) 542-9070

31

## CERTIFICATE OF FACSIMILE TRANSMISSION

    I hereby certify that this paper (and any accompanying paper(s)) is being facsimile transmitted to the United States Patent Office on the date shown below.

John C. Pokotylo
Type or print name of person signing certification

_John C. Pokotylo_              January 25, 2008
Signature                            Date

32